

**LOW PLATINUM FUEL CELLS, CATALYSTS, AND METHOD FOR
PREPARING THE SAME**

ABSTRACT OF THE DISCLOSURE

[0105] This invention provides novel fuel cell catalysts comprising new series of
5 catalytically active thin-film metal alloys with low platinum concentration supported on
nanostructured materials (nanoparticles). In certain embodiments, an integrated gas-
diffusion/electrode/catalyst layer can be prepared by processing catalyst thin films and
nanoparticles into gas-diffusion media such as Toray or SGL carbon fiber papers. The
catalysts can be placed in contact with an electrolyte membrane for PEM fuel cell
10 applications.

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